



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

RB AN8514-1-2
Job Sheet 170757



Part No: RB AN8514-1-2

Job Qty: 7 ea

Part Name: Wrench Handle



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 1/19/18

Job Tracking No:

Due Date: 1/26/18

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: DWG RB AN8514 Rev 4 IPP Rev A 18.01.18 New issue DP Verify DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		1/25/18	0.00	0.00	Start Up Waterjet		2 on 18/03/01
100	Waterjet	1 pcs		1/25/18	0.00	0.10	Waterjet 2 OMAX		2 on 18/03/01
110	QC	1 pcs		1/25/18	0.00	0.00	QC2 Waterjet-4		2 on 18/03/01
120	Mori Seiki	1 pcs		1/26/18	0.00	1.00	MORI NV5000-2		2 on 18/03/03
130	QC	1 pcs		1/26/18	0.00	0.00	QC2-2		2 on 18/05/03
140	QC	1 pcs		1/26/18	0.00	0.00	QC8		2 on 18-05-03
160	Outsource	1 pcs		1/26/18	0.00	0.00	Outsource1		2 on 18-05-03
170	Outsource	1 pcs		1/26/18	0.00	0.00	Outsource12		2 on 18/05/14
180	Packaging	1 pcs		1/26/18	0.00	0.00	Packaging2		2 on 18/05/14
190	QC	1 pcs		1/26/18	0.00	0.00	QC6		2 on 18-05-03
200	Packaging	1 pcs		1/26/18	0.00	0.00	Packaging3-1		2 on 18-05-16
210	QC21-SA	1 Ea		1/26/18	0.00	0.00	QC21		2 on 18/05/17

Part Op 100 - 1-Cut as per Dwg Dwg Rev: 4 Prog Rev: 4 2-Deburr if necessary
Descriptions: 120 - 1-Machine as per folio F18059 FOLIO REV: _____ DWG REV: _____ 2-Deburr
3-Engrave T/N And / or S/N number as required Using Marktronic engraver as per DWG.
160 - 1-Issue P/O to Metcore ; P/O 039796 RC 22-32 2-Bead blast 3- Certificate of Conformity is required
NOTE DROP SHIP TO FINISHER Metcore to ship directly to ATG
170 - -Issue P/O to Groupe Altech; PO _____ -Black oxide finish MIL-C-13924C Class 1 -Certificate of Conformity is required

POSITIVE RECALL

EFFECTIVE 18/5/18 AUTH 5

RELEASED 5 DATE 17-06-18

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
M4148NB0.500X4.000	4140 Steel Bar 0.500 X 4.000	1300 ft (.13 ea)	90-Start up Operation	

Part Specifications

Specifications could not be found.

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Com ☐ Water Jet ☐ Prod. Eng. Coord. ☐ 'Store/Packaging Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																																																	
Date : _____	Step #: _____	QTY Eff- _____		MRB (QSI042) Approval																																																																															
Description Work Order Deviation				Completed By																																																																															
Dart Aerospace Ltd. 1270 Aberdeen Street Newkensbury, ON K6A 1K7 CANADA TEL: 1 813 532-8200 TEL: 1 813 532-8200 Email: sales@dartaero.com www.dartaero.com Date: 02/17/18 Container No: S043475 Part: RB AN8514-1-2 Job No: 170757 Serial No/ Batch: S043475 Revision: RB AN8514 Inspector: _____				Lead hand / Supervisor Approval Verification																																																																															
				QC / QA Coordinator Approval																																																																															
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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

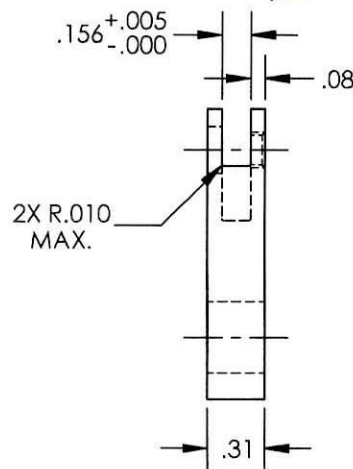
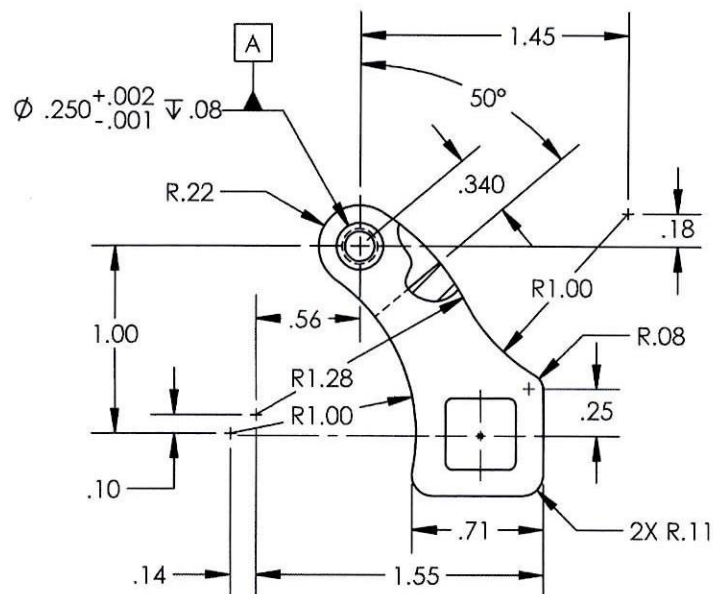
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : ☐					

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

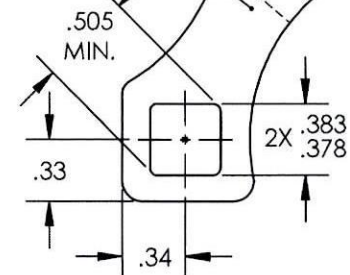
REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
B		CH'D ENGRAVE NOTES.	8/3/2009	RJC	RW
C		-2 ADDED MISSING DIMS, CH'D SOME DIM PRECISION TO MATCH INFO REC'D.	1/10/2011	RJC	SE
4	16-0046	-2 CH'D MAT'L WAS 4140 IS 4140/4142. ADDED MISSING DIM'S 2X R.010 MAX. .14 & .10, .18, CH'D DIMS WAS .384-.379 IS 2X .383-.378. DELETED .024 X 45°.	3/1/2016	RJC	JAG

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 170757 MJS
18-01-19



10-32 UNF - 2B ∇ .08
✓ $\phi .19 \times 90^\circ$, NEAR SIDE
 $\phi .003$ A

ENGRAVE P/N
THIS SIDE,
ENGRAVE T/N, S/N,
MADE IN USA
FAR SIDE



(-2)

HANDLE

DART AEROSPACE	
TITLE ADJUSTABLE SPANNER WRENCH	
DWG NO. RB AN8514-1-2	REV 4
MAT'L 4140/4142	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT RC 22-32	.XXX ± .005 FRACTIONS ± 1/8
FINISH BLACK OXIDE	.XX ± .01 ANGLES ± 5°
SPEC QMSI-6.2.2 REV D	.X ± .1 SURFACES = 125 ✓
DRAWN BY: COLE	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	BELL 212, 230, 407, 412, 430
SCALE 1:1	DATE 6/26/2000
SHEET 2 OF 5	

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

PO039796

Supplier: ATL002-VC
Atlantic Heat Treat 2001
401 Frankcom
Ajax
ON
L1S R14 Canada
Phone: 866 257 6395

PO No: PO039796
PO Date: 5/4/18
Due Date: 5/11/18
Purchase Order
Revision:
Revision Date:
Ship-To Contact: Tsimiklis, ChrisoulaPhone:

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Pymt Terms: Net 30
Freight Terms:
Special Comments:

Items

Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	171227	C45-15-6	Bushing, Lifting 1-Issue P/O to ATLANTIC HEAT TREAT; P/O _____: HEAT TREAT TO RC 44-46, BEAD BLAST AFTER HEAT TREAT ***NOTE*** DROP SHIP TO FINISHER ATLANTIC HEAT TREAT to ship directly to Groupe Altech -Material:4140	Firmed	5/11/18	10 pcs	0 pcs 10x	10 pcs	\$6.50/pcs	\$65.00
2	170757	RB AN8514-1-2	Wrench Handle 1-Issue P/O to ATLANTIC HEAT TREAT; P/O _____ RC 22-32 2-Bead blast 3-Black oxide finish, MIL-C-13924C Class 1 -Apply thin layer of oil/CPC per MIL-PRF-16173 Grade 3 Class 1 or MIL-C-81309 Type III Or MILL-C23411A or MIL-PRF-81309 and wipe off excess. -Certificate of Conformity is required -Material:4140	Firmed	5/11/18	3 pcs	0 pcs 3x	3 pcs	\$25.00/pcs	\$75.00

DAS
38
9-88

Atlantic Heat Treating (2001) Ltd

Certification

Order No.: 154787
Date: 14/05/2018
Entry Date: 11/05/2018
Page: 1 of 1

To:
DART AEROSPACE LTD.
1270 ABERDEEN ST

Purchase Order No.: PO39796
Packing List No.:

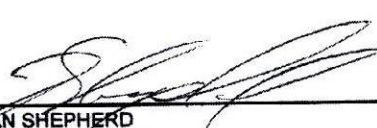
HAWKESBURY ON K6A 1K7 1 Material: 4140

We are pleased to provide you with the following Certificate of Compliance.

Quantity	Part Number / Part Name / Part Description	Pounds
3	3 PCS MATERIAL 4140 HARDEN TO 22-32 RC BLACK OXIDE SANDBLAST C OF C PART # RB AN8514-1-2	1

Insp. Type	Scale	Minimum	Maximum	Number	Other
Customer Requirements:					
Harden	rockwell				
Results:					
Harden	ROCKWE	22.	32.	28.	tested as per sampling plan
heated 28 rc with harden black oxide as per cust requested					

STATEMENT OF LIMITED LIABILITY (PLEASE READ CAREFULLY). ALL WORK IS ACCEPTED SUBJECT TO THE FOLLOWING CONDITIONS: It is recognized that even after employing all the scientific methods known to us, hazards still remain in metal treating. THEREFORE, OUR LIABILITY SHALL NOT EXCEED TWICE THE AMOUNT OF OUR CHARGES FOR THE WORK DONE ON ANY MATERIAL (FIRST TO REIMBURSE FOR THE CHARGES AND SECOND TO COMPENSATE IN THE AMOUNT OF THE CHARGES), EXCEPT BY WRITTEN AGREEMENT SIGNED BY THE METAL TREATER. THE CUSTOMER, BY CONTRACTING FOR METAL TREATMENT, AGREES TO ACCEPT THE LIMITS OF LIABILITY AS EXPRESSED IN THIS STATEMENT TO THE EXCLUSION OF ANY AND ALL PROVISIONS AS TO LIABILITY ON THE CUSTOMER'S OWN INVOICES, PURCHASE ORDERS OR OTHER DOCUMENTS. IF THE CUSTOMER DESIRES HIS OWN PROVISIONS AS TO LIABILITY TO REMAIN IN FORCE AND EFFECT, THIS MUST BE AGREED TO IN WRITING, SIGNED BY AN OFFICER OF THE TREATER. IN SUCH EVENT, A DIFFERENT CHARGE FOR OUR SERVICES REFLECTING THE HIGHER RISK TO TREATER, SHALL BE DETERMINED BY THE TREATER AND CUSTOMER. THE TREATER MAKES NO EXPRESS OR IMPLIED WARRANTIES AND SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF THE FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, AS TO THE PERFORMANCE OF CAPABILITIES OF THE MATERIAL AS HEAT TREATED, OR THE HEAT TREATMENT. THE AFOREMENTIONED LIMITATION OF LIABILITY STATED ABOVE IS SPECIFICALLY IN LIEU OF ANY EXPRESS OR IMPLIED WARRANTY, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS, AND OF ANY OTHER SUCH OBLIGATION ON THE PART OF THE TREATER. No claim for shortage in weight or count will be entertained unless presented within five (5) working days after receipt of materials by customer. No claim will be allowed for shrinkage, expansion, deformation, or rupture of material in treating or straightening, except by prior written agreement, as above, nor in any case for rupture caused by or occurring during subsequent grinding. Whenever we are given material with detailed instructions as to treatment, our responsibility shall end with the carrying out of those instructions. Failure by a customer to indicate plainly and correctly the kind of material (i.e., proper alloy designation) to be treated, shall cause an extra charge to be made to cover any additional expense incurred as a result thereof, but shall not change the limitation of liability stated above. Customer agrees there will be no liability on the treater in connection for any special, indirect or consequential damages arising whatsoever, including but not limited to personal injury, property damage, loss of profits, loss of production, recall or any other losses, expenses or liabilities allegedly occasioned by the work performed on the part of the treater. It shall be the duty of the customer to inspect the merchandise immediately upon its return, and in any event claims must be reported prior to the time that any further processing, assembling or any other work undertaken. OUR LIABILITY TO OUR CUSTOMERS SHALL CEASE ONCE ANY FURTHER PROCESSING, ASSEMBLING OR ANY OTHER WORK HAS BEEN UNDERTAKEN ON SAID MATERIAL. No agent or representative is authorized to alter the above conditions, except by writing duly signed by an officer of treater.


KEAN SHEPHERD
QUALITY CONTROL
ATLANTIC HEAT TREATING 2001 LTD